

REMARKS

In this Amendment, claims 1, 7, 9, 10, 13, 22 and 24 have been amended, claims 4, 23, 28 and 29 have been cancelled, and new claims 30 and 31 have been added. Claims 1-3, 5-22, 24 and 30-31 are pending. Reconsideration and withdrawal of the rejections is requested in view of the foregoing amendments and the following remarks.

Claim 1 has been amended to include the leveling system of claim 4. This is a mechanical leveling system involving a physical attachment or connection between a fixed element, such as the center post, and the camera platform. At 0076, the attachment is achieved via leveling cables 190 (although other equivalent elements could also be used).

Claims 9, 10 and 13 have been amended to depend from claim 1. Claim 23 has been cancelled with content of claim 23 added into amended claim 22. Column 9 of U.S. Patent No. 6,450,706 B1 (of record) discloses track bars having a radius of 400-1200 inches.

Claim 24 has been amended to describe a hydraulic actuator linked to the counter weight and with the second arm section linked to the counterweight.

New claim 30 is similar to claim 1 and further describes the actuator as directly driving only the counter weight carrier, and with the second section also linked to the counter weight carrier.

Turning now to the rejections at paragraph 2 (page 2) of the 11/08/2005 Office Action, Burbulla, U.S. Patent No. 6,776,488 B2, describes a purely electrically powered camera crane. Telescoping movement, and leveling are both achieved

with electric motors. See Col. 6, lines 28-38. The camera platform in Burbulla is leveled via pivot movements about axis H (in Fig. 2) using an electric motor in or at the end 140 of the arm. There is no connection or relation between the leveling system and the base on column 3 in Burbulla. In contrast, in amended claim 1, the leveling system is mechanical and is linked to the center post. No electrical elements are required. As a result, the camera platform on crane of claim 1 can be used in wet conditions, or even be submerged, without affecting the leveling system. None of the other telescoping prior art references suggest this type of leveling system.

Amended claim 1 also describes an actuator linked to the counter weight carrier, and the second section linked to the counter weight carrier. These links are made, for example via the cables 140 and 152 shown in Figs. 23 and 24. Burbulla discloses a crane with telescoping sections. The counterweight 2 is moved by a motor driving the cable 13, as shown in Fig. 1. However, there is no disclosure in Burbulla on how the second section 11 is moved in or out. Specifically, there is no mention in Burbulla of the second section linked to counter weight, as described in amended claim 1. Amended claim 1 is accordingly patentable over Burbulla.

Regarding claim 19, none of Burbulla or the other prior art suggest any relationship, as claimed, between the extension travel and the roller spread, or its advantages as described at 0072.

Claim 21 describes an end riser pivotable into three different positions. This is shown as element 60 in solid and dotted lines in Figs. 6 and 7. By loosening the bolt 200 shown in Figs. 19 and 20, and pulling the release pin 202, the entire end

riser or extension 60, and the head 62 carrying the camera, can quickly be moved into any desired position (overslung, underslung, 90 degrees left, or 90 degrees right). Then releasing the pin 202 and tightening the bolt 200 re-secures the riser 60 in place. Since fast camera position changeover is essential when filming motion pictures (due to the high cost of production time), the crane of claim 21 offers significant advantage. This feature is not suggested in Burbulla or other prior art.

Relative to the rejections at paragraph 2 of the Office Action, claim 2 describes a hydraulic actuator. None of the telescoping crane prior art disclose use of a hydraulic actuator, as claimed. Burbulla uses only electric motors. Furer *et al.* discloses a fixed length crane arm with no telescoping movement. Hydraulic actuators are used only for leveling the column. In Furer *et al.*, there is no hydraulic actuator (or any actuator) linked to a counterweight, as claimed. Even if Burbulla and Furer *et al.* are combined, there would be no suggestion to selectively replace the electric motor (one of several) in Burbulla that drives the extension and retraction of the arm, with a hydraulic actuator. Doing so would tend to negate the 180° plus pivot angle extensively discussed in Burbulla, since a specialized hydraulic system, capable of operating while inverted, would be needed.

Regarding the rejections at paragraph 4 of the Office Action, claim 9 describes the counter weight carrier as moveable from a position forward of the center post to a position behind the center post. None of prior art references suggest this ability. In Burbulla, the counter weight remains behind the column 3 at all times. Col. 6, lines 4-12. Fig. 1 shows the Burbulla crane fully retracted, with the counterweight 2 in its fully forward position—where it is still behind the pivot point 17.

Furer *et al.* is a fixed length arm and has no moving counter weight. Lindsay, U.S. Patent No. 5,697,757, also has no counter weight. Rather Lindsay relies on a rear vertically acting actuator to keep the arm "balanced". Heller (DE 36 28 782 A1) has a rear mounted moving counterweight 36. However, nothing in Heller suggests any ability to move the counterweight forward of the column 10. Indeed, in all of these references, there is no indication anywhere of even any motivation for having the counter weight forward of the column. Indeed, this would tend to move the arm out of balance. The arm of claim 9 includes this feature, however, to counteract buoyancy forces occurring when the front of the arm (including the camera platform, as well as a camera and a camera head) are submerged during underwater filming.

Responsive to the rejections at paragraph 5 of the office action, Masseron *et al.*, discloses use of linear bearings 210. These are shown in Fig. 3 and described at Col. 3, line 32. In contrast, amended claim 7 describes rollers on the first section in rolling contact with and supporting the second section. The rollers are shown in Figs. 12-13 and 21-22. Unlike the linear bearings in Masseron *et al.*, the claimed rollers are largely impervious to water, allowing the crane to be used in wet conditions, without degrading performance. The rollers are also quiet in operation, and tend to not collect or trap as much dust, dirt and debris as linear bearings.

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In view of the foregoing, applicant submits that the application is in condition for allowance. A notice of allowance is requested.

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Respectfully submitted,

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